

IN THE CLAIMS:

Please amend presently pending Claims 18, 19, 21-23, and 28 as follows:

-- 18. (Currently Amended) Flow through aqueous liquid purification apparatus for sterilizing ~~water~~ liquid to a target SAL comprising:

a flow through reservoir comprising an input pathway, an output pathway and an internal heating chamber pathway, disposed between the input pathway and output pathway, said internal heating chamber pathway comprising an enclosed, elongated flow path along which ~~water~~ liquid is displaced and disposed for being heated to a sterilizing temperature;

each of said input, output and heating chamber pathways comprising sidewalls capable of withstanding increased internal pressure generated by ~~water~~ liquid being heated to the sterilizing temperature while being kept in a liquid state;

a heating chamber comprising media which surrounds and is in thermal contact with the internal heating chamber pathway along the enclosed elongated path, said media being heated to a critical predetermined temperature consistent with heating ~~water~~ liquid within the heating chamber pathway to the sterilizing temperature;

a source of pressurized liquid, such source providing the liquid to be sterilized within said heating chamber pathway;

a flow resisting element, disposed in the output pathway, which restricts effluent flow such that, in combination with said pressurized source of liquid, the combination maintains a predetermined minimum upstream pressure ~~is maintained~~ within the internal heating chamber pathway;

a valve subsystem comprising a temperature sensor switch which is disposed to be activated to an ON state when ~~water~~ liquid in the heating chamber pathway is at a first predetermined temperature which is at least as high as the critical predetermined sterilizing temperature; ~~the temperature sensor further being activated to an OFF state at a second predetermined temperature which is less than the first predetermined temperature;~~

said valve subsystem further comprising ~~another valve pressure sensor switch~~ disposed in the ~~output heating chamber~~ pathway which is activated to an ON state when pressure in the heating chamber is at least a first determined pressure consistent with sterilization dynamics ~~opened to permit effluent flow when the temperature sensor switch is ON and closed to restrict effluent flow when the temperature sensor switch is OFF to thereby assure that temperature in the heating chamber pathway is maintained to a sterilizing level; and~~

~~a liquid pressure and flow source providing subsystem having capacity to supply a predetermined volume of liquid which flows through the reservoir against a back pressure which is, at least in part, the consequence of the predetermined minimum upstream pressure provided by the pressure relief valve.~~

said valve subsystem further comprising a valve which is in an OPEN state only when said temperature sensor switch is in an ON state and said pressure sensor switch is in an ON state. - -

- - 19. (Currently Amended) The flow through aqueous liquid purification apparatus according to Claim 18 further comprising a heat exchanger for exchanging heat between cooler waterliquid flowing into the input pathway and warmer waterliquid flowing through the output pathway. - -

20. (Original) The flow through aqueous liquid purification apparatus according to Claim 18 wherein the flow resisting element is a pressure relief valve.

- - 21. (Currently Amended) The flow through aqueous liquid purification apparatus according to Claim 2018 wherein said source comprises a controller for varying source pressure to thereby provide the liquid flow through the heating chamber pathway at a rate which sterilizes the liquid to the desired SAL.~~pressure relief valve comprises an interconnection to an effluent~~

~~end of said heat exchanger to thereby assure that water flowing from the relief valve is reduced in temperature to reduce likelihood of a steam effluent. - -~~

- - 22. (Currently Amended) The flow through aqueous liquid purification apparatus according to Claim 18 wherein at least one of said temperature sensor switch and said pressure sensor switch is switched to OFF at a sensed level which is less than an associated ON level whereby a hysteresis effect is established for the OPEN state of said valve.~~said valve subsystem further comprises a pressure sensor switch which is disposed to be ON when pressure within the heating chamber pathway is at least a first predetermined pressure and OFF when the pressure within the heating chamber pathway is a second predetermined pressure which is less than the first predetermined pressure. - -~~

- - 23. (Currently Amended) The flow through aqueous liquid purification apparatus according to Claim ~~22~~18 wherein said valve subsystem further comprises a combination comprising the valve, the temperature sensor switch, the pressure sensor switch and an AND gate which, in combination, operates~~operate~~ to open the ~~other~~ valve only when the temperature sensor switch and pressure sensor switch are both ON and to close the other valve when either the pressure sensor switch or the temperature sensor switch is OFF to thereby provide safety for heating and pressure failure conditions~~liquid upstream from the valve is decontaminated.~~ - -

24. (Original) The flow through aqueous liquid purification apparatus according to Claim 18 wherein said media comprises material which changes from a solid to liquid state at the predetermined temperature.

25. (Original) The flow through aqueous liquid purification apparatus according to Claim 24 wherein said media comprises paraffin.

26. (Original) The flow through aqueous liquid purification apparatus according to Claim 18 wherein said liquid pressure and flow source comprises a single pump.

27. (Original) The flow through aqueous liquid purification apparatus according to Claim 18 wherein said liquid pressure and flow source comprises a static reservoir with a flow control orifice.

- - 28. (Currently Amended) A method for sterilizing ~~water~~liquid to a target SAL comprising the steps of:

(a) providing a flow through aqueous liquid purification apparatus comprising:

(i) a flow through reservoir comprising an input pathway, an output pathway and an internal heating chamber pathway, disposed between the input pathway and output pathway, said internal heating chamber pathway comprising an enclosed, elongated flow path along which ~~water~~liquid is displaced and disposed for being heated to a sterilizing temperature;

(ii) each of said input, output and heating chamber pathways comprising sidewalls capable of withstanding increased internal pressure generated by ~~water~~liquid being heated to the sterilizing temperature while being kept in a liquid state;

(iii) a heating chamber comprising media which surrounds and is in thermal contact with the internal heating chamber pathway along the enclosed elongated path, said media being heated to a critical predetermined temperature consistent with heating ~~water~~liquid within the heating chamber pathway to the sterilizing temperature;

(iv) a source of pressurized liquid, said source providing liquid to be sterilized within said heating chamber pathway;

(v) a flow resisting element, disposed in the output pathway, which restricts effluent flow such that, in combination with said pressurized source of liquid, maintains a

predetermined minimum upstream pressure ~~is maintained~~ within the internal heating chamber pathway;

(vi) a valve subsystem comprising a temperature sensor switch which is disposed to be activated to an ON state when waterliquid in the heating chamber pathway is at a first predetermined temperature which is at least as high as the sterilizingcritical predetermined temperature ~~the temperature sensor further being activated to an OFF state at a second predetermined temperature which is less than the first predetermined temperature;~~

(vii) said valve subsystem further comprising a pressure sensor switch ~~electrically controlled valve~~ disposed in the outputheating chamber pathway which is activated to an ON state when pressure in the heating chamber pathway is at least a first determined pressure consistent with sterilization dynamics ~~opened to permit effluent flow when the temperature sensor switch is ON and closed to restrict effluent flow when the temperature sensor switch is OFF to thereby assure that temperature in the heating chamber pathway is maintained to a sterilizing level; and~~

(viii) said valve subsystem further comprising a valve which is in an OPEN state only when said temperature sensor switch is in an ON state and when said pressure switch is in an ON state; ~~a liquid pressure and flow source providing subsystem having capacity to supply a predetermined volume of liquid which flows through the reservoir against a back pressure which is, at least in part, the consequence of the predetermined minimum upstream pressure provided by the flow resisting element;~~

(b) delivering waterliquid into the apparatus at a rate which is consistent with a desired SAL value for effluent from the apparatus, waterliquid being delivered via said source into the input, heating chamber and output pathways;

(c) applying heat to the heating chamber pathway via the heating chamber;

(d) opening the valve to permit effluent flow of sterilized liquid only when the temperature sensor switch is in an ON state and the pressure sensor switch is in an ON

~~state permitting effluent flow via the flow resisting element when the minimum upstream pressure is reached by water in the heating chamber pathway;~~

~~—— (e) opening the electrically controlled valve when the temperature sensor switch is activated to an ON state to thereby deliver effluent sterilized water when the flow resisting element is also open to permit effluent flow.~~